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Art Unit 1724

AMENDMENTS TO THE SPECIFICATION:

Please amend the paragraph beginning at page 3, line 19 as follows:

To achieve the above aspects and/or other advantages and features of the present invention, there is provided a cyclone-type dust collecting apparatus for a vacuum cleaner including a cyclone body having an air inlet port and an air outlet port, for forming a vortex current of air which is introduced through the air inlet port and contains dust, a dust collecting container removably coupled to the cyclone body so as to collect the dust separated by centrifugal force of the vortex current in the cyclone body, a double impeller grill assembly disposed at an upstream portion of the air outlet port in the cyclone body to prevent the air from flowing back through the air outlet port, and having a dual structure comprising an outer grill and an inner grill, and a fine dust collecting means disposed at a downstream portion of the double impeller grill assembly in the cyclone body to collect fine dust which is not removed by the double impeller grill assembly.

Please amend the paragraph beginning at page 4, line 5 as follows:

Preferably, the cyclone body comprises a vortex current chamber member that the air inlet port is formed at an outer surface thereof and a communicating hole is formed at an upper surface thereof, and a pressure drop chamber member coupled to the vortex current chamber member to be in fluid communication through the communicating hole and having the air outlet port at an outer surface thereof, and the double impeller grill assembly is disposed at the vortex current chamber member, and fine dust collecting means is disposed at the pressure drop chamber member.

Please amend the paragraph beginning at page 4, line 11 as follows:

Further, the pressure drop chamber member comprises a path forming member partitioning an inner space of the pressure drop chamber member into a first space fluidly communicated with the communicating hole and a second space fluidly communicated with the air outlet port, so that the air containing the fine dust passing through the double impeller grill assembly is flown from the upstream portion toward the

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downstream portion of the fine dust collecting means and exhausted through the air outlet port.

Please amend the paragraph beginning at page 5, line 16 as follows:

According to the present invention, there is provided a vacuum cleaner, comprising a suction brush having a nozzle opened toward an surface to be cleaned and a motor driving chamber in which a motor for generating a suction force in the nozzle is mounted, a main body of the vacuum cleaner, which is rotatably connected to the suction brush and has an air outlet path and an air inlet path connected to the motor driving chamber, and a cyclone-type dust collecting apparatus removably disposed in a dust chamber of the main body, for separately collecting dust contained in air introduced through the nozzle of the suction brush, wherein the cyclone-type dust collecting apparatus comprises a cyclone body having an air inlet port connected to the air inlet path and an air outlet port connected to the air outlet path and forming a vortex current of the air containing the dust introduced through the air inlet port, a dust collecting container removably coupled to the cyclone body so as to collect the dust separated by centrifugal force of the vortex current in the cyclone body, a double impeller grill assembly disposed at an upstream portion of the air outlet port in the cyclone body to prevent the air from flowing back through the air outlet port, and having a dual structure comprising an outer grill and an inner grill, and a fine dust collecting means disposed at a downstream portion of the double impeller grill assembly in the cyclone body to collect fine dust which is not removed by the double impeller grill assembly.

Please amend the paragraph beginning at page 7, line 7 as follows:

As shown in Figs. 3 to 6, a cyclone-type dust collecting apparatus 100 for a vacuum cleaner according to an embodiment of the present invention comprises a cyclone body 110, a dust collecting container 130, a double impeller grill assembly 150 and a fine dust collecting means 170.

Please amend the paragraph beginning at page 7, line 10 as follows:

The cyclone body 110 is comprised of a vortex current chamber member 111

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and a pressure drop chamber member 121 which are separated to each other. Alternatively, the vortex current chamber member 111 and the pressure drop chamber member 121 may be integrally formed. As shown in Fig. 8, the vortex current chamber member 111 has a cylindrical structure of which a lower side is opened. At an outer circumferential surface of the vortex current chamber member 111, there is formed an air inlet port 112. At a center portion of an upper surface, thereof is formed a communicating hole 113. The air inlet port 112 is formed in a tangential direction with respect to the outer circumferential surface. Therefore, the air introduced into the air inlet port 112 forms a vortex current in the vortex current chamber member 111. Furthermore, at a circumference of an inner portion of the vortex current chamber member 111, there are formed a plurality of inward latching portions 114 and outward latching portions 115 at regular intervals. A purpose of the latching portions 114 and 115 is to install the double impeller grill assembly 150, and a more complete explanation will be given later on.

Please amend the paragraph beginning at page 8, line 6 as follows:

The dust collecting container 130 is removably coupled to a lower portion of the cyclone body 110, i.e., the vortex current chamber member 111, so as to collect the dust separated from the air by the centrifugal force of the vortex current. As shown in Fig. 9, the dust collecting container 130 has a dual structure comprising an outer cylinder 131 and an inner cylinder 132, and thus is partitioned into a first dust collecting portion C1 and a second dust collecting portion C2. The outer cylinder 131 is formed to have the same diameter as that of the vortex current chamber member 111, and the inner cylinder 132 is formed to have a smaller diameter than that of the outer cylinder 131. Preferably, the diameter of the inner cylinder 132 is the same as that of an outer grill 151 of the double impeller grill assembly 150, which will be described below. In addition, at a lower side of the inner cylinder 132, a pair of dust outlet paths 133 for exhausting the dust from the first dust collecting portion C1 to a second dust collecting portion C2 are formed to be opposite to each other. The outer cylinder 131 is formed with a handle 134. In the drawings, there is described the dust collecting container 130 having the pair of dust outlet paths 133. However, only a single or 3 ~ 4 dust outlet

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paths 133 may be formed.

Please amend the paragraph beginning at page 8, line 20 as follows:

The double ~~impeller~~ grill assembly 150 is disposed at an upstream portion of the air outlet port 122 in the cyclone body 110, more concretely, at a circumference of the communicating hole 113 of the vortex current chamber member 111 so as to prevent a backflow of the dust separated from the air through the air outlet port 122.

Please amend the paragraph beginning at page 8, line 24 as follows:

The double ~~impeller~~ grill assembly 150 has a dual structure comprising an outer grill 151 and an inner grill 156 according to a characteristic of the present invention. The outer grill 151 has a cylindrical grill body 152 of which upper and lower portions are opened and which is formed with a plurality of paths 153 at an outer surface thereof. A plurality of first latching protrusions 154 formed at an inner portion of an upper end of the grill body 152 at regular intervals are coupled to the outward latching portions 115 formed at the circumference of the communicating hole 113 of the vortex current chamber member 111. The inner grill 156 has a cylindrical grill body 157 of which upper and lower portions are opened and which is formed with a plurality of paths 158 at an outer surface thereof. A plurality of second latching protrusions 159 formed at an outer portion of an upper end of the grill body 157 at regular intervals are coupled to the inward latching portions 114 formed at the circumference of the communicating hole 113 of the vortex current chamber member 111.

Please amend the paragraph beginning at page 9, line 25 as follows:

The fine dust collecting means 170 is disposed at a downward portion of the double ~~impeller~~ grill assembly 150 in the cyclone, i.e., at an inner portion of the pressure drop chamber member 121, so that the fine dust which is not separated by the double ~~impeller~~ grill assembly 150 is collected once again. Therefore, the backflow of the dust by which the fine dust is exhausted together with the air to the outside is prevented, thereby increasing the dust collecting efficiency of the cyclone-type dust collecting apparatus.

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Please amend the paragraph beginning at page 10, line 20 as follows:

When starting a cleaning operation, a suction force is generated at a nozzle of a suction brush 300 due to driving of a motor in a motor driving chamber 310. Then, the air containing the dust on a surface of an object to be cleaned is introduced through the nozzle of the suction brush 300, the air inlet path 210 and the air inlet port 112 into the vortex current chamber member 111 of the cyclone body 110 due to the suction force. The air containing the dust, which is introduced through the air inlet port 112 to the vortex current chamber member 111, forms a vortex current having a large diameter with the outer grill 151 of the double impeller grill assembly 150 in the center. Therefore, the comparative large dust is separated by the centrifugal force and then collected in the second dust collecting portion C2 of the dust collecting container 130. Then, the air in which the large dust is firstly collected forms the vortex current having a small diameter with the inner grill 156 of the double impeller grill assembly 150 in the center, whereby the dust is secondly separated and then collected in the first dust collecting portion C1 of the dust collecting container 130. As described above, since the large dust and the comparative small dust is separately collected in the dust collecting container 130, that is, the large dust is collected in the second dust collecting portion C2 and the comparative small dust is collected in the first dust collecting portion C1, it is prevented that the path of the grill assembly 150 is clogged by the large dust. Further, since an intensity of the vortex current in the first dust collecting portion C1 for collecting the small dust is weakened, the ascending of the dust is prevented, thereby effectively collecting the dust.